NDI® Network Guidelines

All information included is considered current as of date of publishing and subject to change without notice.

Network Switch Considerations

- Gigabit Ethernet on all network switch ports is required
    - Greater than Gigabit networking is recommended
- Ensure network switch backplane supports full throughput capacity required
    - Capacity = Number of ports x Speed x 2
- DHCP recommended to simplify setup and network configuration
    - DHCP is required for NewTek control panels connected via Ethernet
- For devices that optionally support Power over Ethernet (POE):
    - NewTek NDI|HX-PTZ1 Camera requires POE+ (25.5w)
    - NewTek Connect Spark™ Pro requires POE (15w)
    - While POE+ switches will support POE, POE switches will not support POE+
    - Be sure to determine the power budget required for devices and switch

Managed Switch Settings

Apply the following settings when possible:

- **DISABLE** Quality of Service
- **DISABLE** Jumbo Frames
- **ENABLE** Flow Control as *Asymmetrical* or simply as *On* (required for TCP data transfer using versions prior to NDI® 3.5)
- **ENABLE** IGMP Snooping if using multicast (mDNS is automatically blocked by many switches when snooping is enabled—refer to documentation from your switch vendor)
- **CONFIGURE** IGMP Querier and Query Interval for each switch in multi-switch networks when using multicast

Firewalls & Ports

- mDNS/Bonjour must be accessible for automatic discovery of NDI®
- Manual discovery requires access to port 5960 for the NDI® messaging server, and subsequent ports starting at 5961 for NDI® video streams
- Check the available port range from a Microsoft® Windows® PC using Cmd: **ntsh**

Cabling

- Ensure proper cabling and length requirements
- Minimum of CAT5e cabling grade is required for GigE performance

VLAN Deployment

- VLAN deployments can vary considerably—please consult your regional NewTek sales engineer, workflow specialist, or NewTek Professional Services prior to VLAN projects

Device Network Adapters

- Employ DHCP to assign IP addresses automatically or assign static IP addresses manually
- Use manual configuration in NDI® Access Manager to cross subnets
- Designate the network location on all NICs as *Work* (private)
- Connect any available Gigabit or greater network interfaces

Approximate Bandwidth Requirements

NDI®	Format	Fps	Mbps	MB/s
NDI|HX	1920x1080	59.94	16	3
NDI	1920x1080	25	105	10-13
NDI	1920x1080	29.97	110	12-15
NDI	1920x1080	59.94	180	20-25
NDI	3840x2160	29.97	250	28-35
NDI	3840x2160	59.94	350	40-48

Network Latency

- Round-trip latency must be less than 14ms for optimal video switching performance
- NDI® version 3.5 supports UDP with forward error correction (FEC) for unicast video data flow (prior versions use TCP)

Tips

- Confining your NDI® workflow to a dedicated or uncontended network is highly recommended for management, reliability, and troubleshooting purposes—especially if migrating to an IP workflow for the first time.
- NewTek Professional Services can help you achieve your ambition, regardless of scale or complexity—engage us early on to ensure your success!